REMARKS

The Office Action mailed June 25, 2007, has been carefully reviewed and the following remarks are made in consequence thereof.

Claims 1-20 are now pending in this application. Claims 1-20 stand rejected. Claim 7 stands objected to.

The objection to Claim 7 is respectfully traversed. Applicants have amended Claim 7 to correct the antecedent basis issue raised in the Office Action. For at least the reasons set forth above, Applicants request that the objection to Claim 7 be withdrawn.

The provisional rejection of Claims 1-20 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of U.S. Patent Application No. 10/810,142, is respectfully traversed. Applicants note that U.S. Patent Application No. 10/810,142 was issued on July 24, 2007 as U.S. Patent 7,246,481 to Gutmark et al. Submitted herewith is a Terminal Disclaimer disclaiming the terminal part of the statutory term of any patent granted from the present patent application which would extend beyond the expiration date of the full statutory term of U.S. Patent No. 7,246,481. In view of the submitted Terminal Disclaimer, Applicants respectfully request that the obviousness-type double patenting rejection of Claims 1-20 be withdrawn.

The rejection of Claims 1, 4, 8, 14, 15 and 20 under 35 U.S.C. § 102(b) as being anticipated by Dorris, III et al. (U.S. Patent No. 6,308,898) ("Dorris") is respectfully traversed.

Preliminarily, Applicants respectfully traverse the statement within the Office Action that "[s]ince Dorris has the same structure as claimed, it is inherent that Dorris' device would be able to perform the recited method steps." Applicants respectfully submit that the Examiner has not shown that Dorris describes nor suggests selectively operating a noise suppression system such that air is distributed substantially uniformly among a plurality of tubes and is discharged from the noise suppression system thereby generating a flow control

mechanism in a gas turbine exhaust flowpath, as is recited in independent Claims 1, 8 and 15. The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 U.S.P.Q.2d 1955, 1957 (Fed. Cir. 1993). To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. In re Robertson, 169 F.3d 743, 745, 49 U.S.P.Q.2d 1949, 1950-51 (Fed. Cir. 1999). Applicants respectfully submit that Dorris does not describe nor suggest selectively operating the noise suppression system such that air is distributed substantially uniformly among a plurality of tubes and discharged from the noise suppression system thereby generating a flow control mechanism in a gas turbine exhaust flowpath.

Moreover, Dorris describes a method for inducing mixing of an exhaust plume and for controlling the shape of the plume. Pulsed jet nozzles (42) are defined as circumferentially elongated slots in the side wall (50) of the core nozzle (40). The jet nozzles (42) open into the main flow path from the nozzle (40) immediately upstream of the exit plane, and are supplied with air by passages (52) formed in the nozzle side wall (50). Two jet nozzles (42) are located on diametrically opposite sides of the nozzle (40), and each jet nozzle (42) extends circumferentially about an arc of about 90°. The jet nozzles (42) are pulsed out of phase relative to one another at a frequency based on the flow conditions of the plume so as to cause instability in a shear layer of the plume downstream from the exit plane of the core nozzle (40). Subsequently, the pulsing causes the plume to undergo a back-and-forth flapping motion that enhances mixing in the exhaust plume. The mixing of the exhaust plume occurs external to and downstream from the exhaust nozzle, and thus does not depend on mixer hardware for internally mixing bypass and core streams. Notably, Dorris does not describe nor suggest a gas turbine engine including a noise suppression system which further includes a plurality of tubes positioned azimuthally around an outer periphery of the nozzle and that is operable such that when air is distributed substantially uniformly among the plurality of tubes, the air output at the exhaust of the nozzle forms a vortex, and thereby generates a flow control mechanism in the exhaust flowpath.

Claim 1 recites a method for operating a gas turbine engine including "positioning a plurality of tubes azimuthally around an outer periphery of a nozzle . . . coupling an upstream end of each of the plurality of tubes to a manifold . . . coupling a downstream end of each of the plurality of tubes to the nozzle such that the plurality of tubes each extend away from the manifold . . . orienting the downstream end of each of the plurality of tubes at an angle such that air discharged from the plurality of tubes forms a vortex . . . channeling compressed air from the gas turbine engine to a noise suppression system . . . selectively operating the noise suppression system such that air is distributed substantially uniformly among the plurality of tubes and is discharged from the noise suppression system generating a flow control mechanism in a gas turbine exhaust flowpath."

Dorris does not describe nor suggest a method for operating a gas turbine engine as is recited in Claim 1. Specifically, Dorris does not describe nor suggest a gas turbine engine which includes selectively operating a noise suppression system such that air is distributed substantially uniformly among a plurality of tubes and discharged from the noise suppression system generating a flow control mechanism in the gas turbine exhaust flowpath. Rather, in contrast to the present invention, Dorris describes a method for inducing mixing of an exhaust plume using jet nozzles that are pulsed so as to cause instability of a shear layer of the plume downstream from the exit plane of the nozzle and to cause the plume to undergo a back-and-forth flapping motion that enhances mixing. The mixing of the exhaust plume occurs external to and downstream from the exhaust nozzle, and thus does not depend on mixer hardware for internally mixing bypass and core streams. Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Dorris.

Claim 4 depends from independent Claim 1. When the recitation of Claim 4 is considered in combination with the recitation of Claim 1, Applicants submit that Claim 4 likewise is patentable over Dorris.

Claim 8 recites an assembly for a gas turbine engine including "a gas turbine nozzle... a noise suppression system coupled to said gas turbine nozzle, said noise suppression system comprising a manifold coupled to said gas turbine nozzle and a plurality of azimuthally arranged tubes each of said plurality of tubes comprises an upstream end coupled to said

manifold and a downstream end coupled to said gas turbine nozzle such that said plurality of tubes each extend away from said manifold, each of said plurality of tubes is oriented such that air discharged from said plurality of tubes forms a vortex, said noise suppression system is selectively operable to facilitate generating a plurality of flow control mechanisms such that air is distributed substantially uniformly among said plurality of tubes in said gas turbine nozzle flowpath."

Dorris does not describe nor suggest an assembly for a gas turbine engine as is recited in Claim 8. Specifically, Dorris does not describe nor suggest a gas turbine engine which includes a noise suppression system further including a plurality of azimuthally arranged tubes whereby air is distributed substantially uniformly among the tubes and discharged from the noise suppression system generating a flow control mechanism in the gas turbine exhaust flowpath. Rather, in contrast to the present invention, Dorris describes a method and apparatus for inducing and enhancing mixing of an exhaust plume and for controlling the shape of the plume. Jet nozzles are pulsed so as to cause instability of a shear layer of the plume downstream from the exit plane of the nozzle and thereby cause the plume to undergo a back-and-forth flapping motion that enhances mixing. The mixing of the exhaust plume occurs external to and downstream of the exhaust nozzle, and thus does not depend on mixer hardware for internally mixing bypass and core streams. Accordingly, for at least the reasons set forth above, Claim 8 is submitted to be patentable over Dorris.

Claim 14 depends from independent Claim 8. When the recitation of Claim 14 is considered in combination with the recitation of Claim 8, Applicants submit that Claim 14 likewise is patentable over Dorris.

Claim 15 recites a gas turbine engine including "a core engine nozzle . . . a fan nozzle coupled upstream from said core engine nozzle . . . a noise suppression system comprising a manifold coupled to said gas turbine nozzle and a plurality of azimuthally arranged tubes each of said plurality of tubes comprises an upstream end coupled to said manifold and a downstream end coupled to said gas turbine nozzle such that said plurality of tubes each extend away from said manifold, each of said plurality of tubes oriented such that air discharged from said plurality of tubes forms a vortex, said noise suppression system is

selectively operable to facilitate generating a plurality of flow control mechanisms such that air is distributed substantially uniformly among said plurality of tubes in said core engine nozzle flowpath."

Dorris does not describe nor suggest an assembly for a gas turbine engine, as is recited in Claim 15. Specifically, Dorris does not describe nor suggest a gas turbine engine which includes a noise suppression system further including a plurality of azimuthally arranged tubes whereby air is distributed substantially uniformly among the tubes and discharged from the noise suppression system generating a flow control mechanism in the gas turbine exhaust flowpath. Rather, in contrast to the present invention, Dorris describes a method and apparatus for inducing and enhancing mixing of an exhaust plume and for controlling the shape of the plume. Jet nozzles are pulsed so as to cause instability of a shear layer of the plume downstream from the exit plane of the nozzle and thereby cause the plume to undergo a back-and-forth flapping motion that enhances mixing. The mixing of the exhaust plume occurs external to and downstream of the exhaust nozzle, and thus does not depend on mixer hardware for internally mixing bypass and core streams. Accordingly, for at least the reasons set forth above, Claim 15 is submitted to be patentable over Dorris.

Claim 20 depends from independent Claim 15. When the recitation of Claim 20 is considered in combination with the recitation of Claim 15, Applicants submit that Claim 20 likewise is patentable over Dorris.

The rejection of Claims 1, 4, 8, 14, 15 and 20 under 35 U.S.C. § 102(b) as being anticipated by Shaw, Jr. (U.S. Patent No. 5,092,425) ("Shaw") is respectfully traversed.

Preliminarily, Applicants respectfully traverse the statement within the Office Action that "[s]ince Shaw has the same structure as claimed, it is inherent that Shaw's device would be able to perform the recited method steps." Applicants respectfully submit that the Examiner has not shown that Shaw describes or suggests selectively operating the noise suppression system such that air is distributed substantially uniformly among a plurality of tubes and discharged from the noise suppression system generating a flow control mechanism in a gas turbine exhaust flowpath as is recited in independent Claims 1, 8 and 15. The fact

that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 U.S.P.Q.2d 1955, 1957 (Fed. Cir. 1993). To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. In re Robertson, 169 F.3d 743, 745, 49 U.S.P.Q.2d 1949, 1950-51 (Fed. Cir. 1999). Applicants respectfully submit that Shaw does not describe or suggest selectively operating the noise suppression system such that air is distributed substantially uniformly among a plurality of tubes and discharged from the noise suppression system generating a flow control mechanism in a gas turbine exhaust flowpath.

Moreover, Shaw describes an apparatus for suppressing noise generated by jet engine nozzles. An elongated conduit (40) coupled to the outer surface (41) of an engine casing (11) extends longitudinally from the region of the compressor (14) rearward to the exhaust exit plane. The conduit (40) generates a secondary jet stream which interacts at the boundary between the exhaust gas flow and the ambient air and serves to suppress the generation of noise typically produced by the jet engine. Notably, Shaw does not describe nor suggest a gas turbine engine including a nozzle equipped with a noise suppression system which includes a plurality of tubes positioned azimuthally around an outer periphery of the nozzle and operating such that when air is distributed substantially uniformly among the plurality of tubes, the air output at the exhaust of the nozzle forms a vortex and thereby generates a flow control mechanism in the exhaust flowpath.

Claim 1 recites a method for operating a gas turbine engine including "positioning a plurality of tubes azimuthally around an outer periphery of a nozzle . . . coupling an upstream end of each of the plurality of tubes to a manifold . . . coupling a downstream end of each of the plurality of tubes to the nozzle such that the plurality of tubes each extend away from the manifold . . . orienting the downstream end of each of the plurality of tubes at an angle such that air discharged from the plurality of tubes forms a vortex . . . channeling compressed air from the gas turbine engine to a noise suppression system . . . selectively operating the noise suppression system such that air is distributed substantially uniformly among the plurality of

tubes and is discharged from the noise suppression system generating a flow control mechanism in a gas turbine exhaust flowpath."

Shaw does not describe nor suggest a method for operating a gas turbine engine as is recited in Claim 1. Specifically, Shaw does not describe nor suggest a method of operating a gas turbine engine which includes selectively operating a noise suppression system such that air is distributed substantially uniformly among a plurality of tubes and discharged from the noise suppression system generating a flow control mechanism in the gas turbine exhaust flowpath. Rather, in contrast to the present invention, Shaw describes an apparatus for suppressing noise generated by jet engine nozzles whereby an elongated conduit extending longitudinally from the region of the compressor rearward to the exhaust exit plane provides a secondary jet stream which interacts at the boundary between the exhaust gas flow and the ambient air to suppress the generation of noise. Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Shaw.

Claim 4 depends from independent Claim 1. When the recitation of Claim 4 is considered in combination with the recitation of Claim 1, Applicants submit that Claim 4 likewise is patentable over Shaw.

Claim 8 recites an assembly for a gas turbine engine including "a gas turbine nozzle... a noise suppression system coupled to said gas turbine nozzle, said noise suppression system comprising a manifold coupled to said gas turbine nozzle and a plurality of azimuthally arranged tubes each of said plurality of tubes comprises an upstream end coupled to said manifold and a downstream end coupled to said gas turbine nozzle such that said plurality of tubes each extend away from said manifold, each of said plurality of tubes is oriented such that air discharged from said plurality of tubes forms a vortex, said noise suppression system is selectively operable to facilitate generating a plurality of flow control mechanisms such that air is distributed substantially uniformly among said plurality of tubes in said gas turbine nozzle flowpath."

Shaw does not describe nor suggest an assembly for a gas turbine engine as is recited in Claim 8. Specifically, Shaw does not describe nor suggest a gas turbine engine which

includes a noise suppression system further including a plurality of azimuthally arranged tubes whereby air is distributed substantially uniformly among the tubes and discharged from the noise suppression system generating a flow control mechanism in the gas turbine exhaust flowpath. Rather, in contrast to the present invention, Shaw describes an apparatus for and method of suppressing noise generated by jet engine nozzles whereby an elongated conduit is coupled to the outer surface of engine casing and extends longitudinally from the region of the compressor rearward to the exhaust exit plane. The conduit provides a secondary jet stream which interacts at the boundary between the exhaust gas flow and the ambient air and serves to suppress the generation of noise typically produced by such a jet engine. Accordingly, for at least the reasons set forth above, Claim 8 is submitted to be patentable over Shaw.

Claim 14 depends from independent Claim 8. When the recitation of Claim 14 is considered in combination with the recitation of Claim 8, Applicants submit that Claim 14 likewise is patentable over Shaw.

Claim 15 recites a gas turbine engine including "a core engine nozzle . . . a fan nozzle coupled upstream from said core engine nozzle . . . a noise suppression system comprising a manifold coupled to said gas turbine nozzle and a plurality of azimuthally arranged tubes each of said plurality of tubes comprises an upstream end coupled to said manifold and a downstream end coupled to said gas turbine nozzle such that said plurality of tubes each extend away from said manifold, each of said plurality of tubes oriented such that air discharged from said plurality of tubes forms a vortex, said noise suppression system is selectively operable to facilitate generating a plurality of flow control mechanisms such that air is distributed substantially uniformly among said plurality of tubes in said core engine nozzle flowpath."

Shaw does not describe nor suggest a gas turbine engine as is recited in Claim 15. Specifically, Shaw does not describe nor suggest a gas turbine engine which includes a noise suppression system further including a plurality of azimuthally arranged tubes whereby air is distributed substantially uniformly among the tubes and discharged from the noise suppression system generating a flow control mechanism in the gas turbine exhaust flowpath.

Rather, in contrast to the present invention, Shaw describes an apparatus for and method of suppressing noise generated by jet engine nozzles whereby an elongated conduit is coupled to the outer surface of engine casing and extends longitudinally from the region of the compressor rearward to the exhaust exit plane. The conduit provides a secondary jet stream which interacts at the boundary between the exhaust gas flow and the ambient air and serves to suppress the generation of noise typically produced by such a jet engine. Accordingly, for at least the reasons set forth above, Claim 15 is submitted to be patentable over Shaw.

Claim 20 depends from independent Claim 15. When the recitation of Claim 20 is considered in combination with the recitation of Claim 15, Applicants submit that Claim 20 likewise is patentable over Shaw.

The rejection of Claims 8 and 15 under 35 U.S.C. § 102(e) as being anticipated by Nesbitt, et al. (U.S. Patent No. 6,718,752) ("Nesbitt") is respectfully traversed.

Nesbitt describes an exhaust flow nozzle for a jet engine having a plurality of flow altering components (16) extending from a lip portion (18) of a secondary exhaust nozzle (14) that are movable between first and second positions. The flow altering components (16) are fabricated from a shape-memory alloy material which deforms in response to heat. In the first position the flow altering components (16) are substantially parallel to an exhaust gas flow path and do not produce drag or a reduction of thrust from the engine. In the second position the flow altering components bend or are deformed to project into the exhaust gas flow path exiting from the secondary exhaust nozzle. One or more additional layers of material are bonded or otherwise coupled to the shape-memory alloy layer of each flow altering component to assist in returning the shape-memory alloy layer to its unheated shape. Notably, Nesbitt does not describe nor suggest a gas turbine engine including a nozzle equipped with a noise suppression system which includes a plurality of tubes positioned azimuthally around an outer periphery of the nozzle and operating such that when air is distributed substantially uniformly among the plurality of tubes, the air output at the exhaust of the nozzle forms a vortex and thereby generates a flow control mechanism in the exhaust flowpath.

Claim 8 recites an assembly for a gas turbine engine including "a gas turbine nozzle... a noise suppression system coupled to said gas turbine nozzle, said noise suppression system comprising a manifold coupled to said gas turbine nozzle and a plurality of azimuthally arranged tubes each of said plurality of tubes comprises an upstream end coupled to said manifold and a downstream end coupled to said gas turbine nozzle such that said plurality of tubes each extend away from said manifold, each of said plurality of tubes is oriented such that air discharged from said plurality of tubes forms a vortex, said noise suppression system is selectively operable to facilitate generating a plurality of flow control mechanisms such that air is distributed substantially uniformly among said plurality of tubes in said gas turbine nozzle flowpath."

Nesbitt does not describe nor suggest an assembly for a gas turbine engine, as is recited in Claim 8. Specifically, Nesbitt does not describe nor suggest a gas turbine engine which includes a noise suppression system further including a plurality of azimuthally arranged tubes whereby air is distributed substantially uniformly among the tubes and discharged from the noise suppression system generating a flow control mechanism in the gas turbine exhaust flowpath. Rather, in contrast to the present invention, Nesbitt describes an exhaust flow nozzle having a plurality of flow altering components extending from a lip portion of a secondary exhaust nozzle that are movable between first and second positions. In the first position the flow altering components are disposed substantially parallel to an exhaust gas flow path and thereby do not produce drag or a reduction of thrust from the engine. In the second position the flow altering components bend or are deformed to project into the exhaust gas flow path exiting from the secondary exhaust nozzle. Accordingly, for at least the reasons set forth above, Claim 8 is submitted to be patentable over Nesbitt.

Claim 15 recites a gas turbine engine including "a core engine nozzle . . . a fan nozzle coupled upstream from said core engine nozzle . . . a noise suppression system comprising a manifold coupled to said gas turbine nozzle and a plurality of azimuthally arranged tubes each of said plurality of tubes comprises an upstream end coupled to said manifold and a downstream end coupled to said gas turbine nozzle such that said plurality of tubes each extend away from said manifold, each of said plurality of tubes oriented such that air

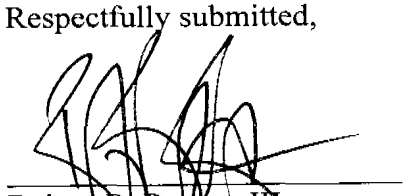
discharged from said plurality of tubes forms a vortex, said noise suppression system is selectively operable to facilitate generating a plurality of flow control mechanisms such that air is distributed substantially uniformly among said plurality of tubes in said core engine nozzle flowpath."

Nesbitt does not describe nor suggest a gas turbine engine, as is recited in Claim 15. Specifically, Nesbitt does not describe nor suggest a gas turbine engine which includes a noise suppression system further including a plurality of azimuthally arranged tubes whereby air is distributed substantially uniformly among the tubes and discharged from the noise suppression system generating a flow control mechanism in the gas turbine exhaust flowpath. Rather, in contrast to the present invention, Nesbitt describes an apparatus for an exhaust flow nozzle for a jet engine having a plurality of flow altering components extending from a lip portion of a secondary exhaust nozzle that are movable between first and second positions. In the first position the flow altering components are disposed substantially parallel to an exhaust gas flow path and thereby do not produce drag or a reduction of thrust from the engine. In the second position the flow altering components bend or are deformed to project into the exhaust gas flow path exiting from the secondary exhaust nozzle. Accordingly, for at least the reasons set forth above, Claim 15 is submitted to be patentable over Nesbitt. Accordingly, for at least the reasons set forth above, Claim 15 is submitted to be patentable over Nesbitt.

For at least the reasons set forth above, Applicants respectfully request the Section 102(e) rejection of Claims 8 and 15 be withdrawn.

In view of the foregoing remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully submitted,



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